I CLAIM:

1. A mold block assembly for thermoforming plastic pipe having transverse corrugations, comprising:
   a. a mating pair of mold blocks capable of mating along a parting surface; each of said blocks comprising:
      i. an internal lateral surface comprising at least one corrugation revolving around an axis;
      ii. an external lateral surface axially concentric with said internal lateral surface, said external lateral surface further comprising at least one channel concentric with said at least one corrugation, the width of said at least one channel corresponding approximately to the width of said at least one corrugation;
      iii. a vacuum port connected to said at least one channel;
      iv. a plurality of radial slots having approximately the same width, one end of each of said radial slots intersecting said at least one channel, said slots extending radially inwardly and terminating a distance from said internal lateral surface;
      v. a plurality of slits formed in said at least one corrugation at said internal lateral surface and intersecting the width of said slots; and
      vi. at least one outer cover on said external lateral surface forming an air tight manifold, said manifold having a large cross-sectional area relative to the aggregate area of said slits ported to said manifold through said plurality of radial slots.

2. An air-cooled mold block assembly for thermoforming plastic pipe comprising a mating pair of mold halves, said pair capable of mating along a parting surface, each half comprising:
   a. an internal lateral surface having at least one corrugation revolving around an axis;

b. an external lateral surface axially concentric with said internal lateral surface, said external lateral surface further comprising at least one channel concentric with said at least one corrugation, the width of said at least one channel corresponding approximately to the width of said at least one corrugation;

c. a vacuum port connected to said at least one channel;

d. a plurality of slits formed in said at least one corrugation at said internal lateral surface and intersecting said at least one channel;

e. an inner cover for said at least one channel forming an air-tight manifold concentric with said axis, said manifold having a large cross-sectional area relative to the aggregate area of said slits;

f. an outer cover forming at least one outer circumferential duct between said outer cover and said inner cover, said outer cover having an opening to receive cooling air, said at least one duct being concentric to said axis, and having a cross-section shaped to maximize both the velocity of the cooling air received therein and the area of said inner cover in contact with said cooling air; and

g. a source of cooling air ported to said at least one outer circumferential duct through said opening in said outer cover.

3. The mold block assembly of Claim 2 in which the inner and outer covers are removable.

4. The mold block assembly of Claim 1 in which the cross-sectional area of the plurality of slots is at least the aggregate area of the slits.

5. The mold block assembly of Claim 1 in which the relationship of the change in pressure across the length of the slits with the change in pressure from the vacuum source to the slits is $\Delta P_s / \Delta P_c = W_c D_c^3 L_s / n W_s D_s^3 L_c >> 1$, where W_c is the width of the channel, D_c is the depth of the channel, L_s is the length of the slits, n is the number of slits, W_s is the width of the slits, D_s is the depth of the slits, and L_c is the length of the channel.

6. A method for delivering uniform vacuum pressure in the process of thermoforming a corrugated plastic pipe in a mold, comprising the steps of:

a. providing at least one vacuum port connected to a channel located on an external lateral surface of the mold, the channel being axially concentric with a corrugation located on an internal lateral surface of the mold, the width of the channel corresponding approximately to the width of the corrugation;

b. forming an air-tight manifold by providing an outer cover on the external lateral surface, the manifold being ported to a plurality of slits formed in the corrugation through a plurality of slots in the mold, the slots having a large cross-sectional area relative to the aggregate area of the slits;

c. connecting vacuum source to said at least one vacuum port; and

d. exerting an essentially uniform negative pressure on each one of the plurality of slots, such that the change in negative pressure across the slots is small relative to the change in negative pressure across the slits.

7. The method of Claim 6 wherein each slot has the same width.

8. The method of Claim 6 in which the relationship of the change in pressure across the length of the slits with the change in pressure from the vacuum source to the slits is $\Delta P_s / \Delta P_c = W_c D_c^3 L_s / n W_s D_s^3 L_c >> 1$, where W_c is the width of the channel, D_c is the depth of the channel, L_s is the length of the slits, n is the number of slits, W_s is the width of the slits, D_s is the depth of the slits, and L_c is the length of the channel.

9. A method for efficiently removing heat during the process of thermoforming a corrugated plastic pipe in a mold, comprising the steps of:

a. providing at least one vacuum port connected to a channel located on an external lateral surface of the mold that is axially concentric with a corrugation located on an internal lateral surface of the mold, the width of the channel corresponding approximately to the width of the corrugation;

b. forming an air-tight manifold by providing a first cover on the external lateral surface;

c. providing a second cover that forms an outer circumferential duct between the channel and said second cover;

d. connecting a source of high velocity cooling air to an opening in the second cover; and

e. forcing a turbulent flow of cooling air through the duct.

10. A mold block assembly for thermoforming a fitting for a plastic pipe having a combination of corrugated and smooth regions, comprising:

a. a mating pair of mold blocks defining a fitting for a plastic pipe, capable of mating along a parting surface; each of said blocks comprising:

i. an internal lateral surface comprising a smooth region and at least one corrugation revolving around an axis;

ii. an external lateral surface axially concentric with said internal lateral surface, said external lateral surface further comprising at least one channel concentric with said smooth region and corrugation;

iii. a vacuum port connected to said at least one channel;

iv. a plurality of radial slots having approximately the same width, one end of each of said radial slots intersecting said at least one channel, said slots extending radially inwardly and terminating a distance from said internal lateral surface;

v. a plurality of slits formed in said smooth region and corrugation and intersecting the diameter of said slots, said plurality of slots having a large cross-sectional area relative to the aggregate area of said slits; and

vi. at least one outer cover on said external lateral surface forming an air tight manifold, said manifold having a large cross-sectional area relative to the aggregate area of said slits ported to said manifold through said plurality of radial slots.

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